

**In the Claims:**

The following listing of claims replaces all other prior listings of claims.

1. (currently amended) A method of diagnosing a pathological condition of a patient's body tissue, the method comprising determining the presence or severity of ischemia in the tissue by the steps of:  
inserting a pH sensor into the tissue,  
directly measuring intracompartmental pH in the tissue with the pH sensor and generating an electrical signal representative of the intracompartmental pH and converting said electrical signal into a human-readable indication of the intracompartmental pH, and  
a person using the intracompartmental pH measurement to determine the presence or severity of ischemia and to diagnose the pathological condition;  
wherein the pH sensor consists of a single probe mounted on a catheter.
2. (original) A method as claimed in claim 1, wherein the tissue is muscle.
3. (previously presented) A method as claimed in claim 1, wherein a second sensor is used to measure the intracompartmental pressure in the tissue.
4. (cancelled)
5. (previously presented) A method as claimed in claim 1, wherein the catheter is inserted into a muscle through a cannula.
6. (previously presented) A method as claimed in claim 5, wherein the cannula is inserted into skeletal muscle in an orientation that is generally parallel to the muscle fibres.

7. (previously presented) A method as claimed in claim 5, wherein the cannula is inserted into a muscle adjacent to a bone fracture site, but not communicating with the bone fracture site.
8. (previously presented) A method as claimed in claim 1, wherein the reading from the sensor is compared with a calibrated scale to determine the extent of tissue damage.
9. (previously presented) A method as claimed in claim 1, wherein the pathological condition is Acute Compartment Syndrome.
10. (cancelled)
11. (previously presented) A method as claimed in claim 1, wherein the ischemia involves a shock selected from the group consisting of septic shock, neurogenic shock, cardiogenic shock and hypovolaemic shock.
12. (cancelled)